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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/750,958

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Harald Volkenandt

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EXAMINER

SPECTOR, DAVID N

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/750,958

Applicant(s)

VOLKENANDT ET AL.

Examiner

David N. Spector

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8 and 11-16 is/are rejected.
- 7) ☒ Claim(s) 5-7, 9, 10 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>0404/20040408</u> . | 6) <input checked="" type="checkbox"/> Other: <u>DETAILED ACTION</u> . |

DETAILED ACTION***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 8, 11, and 13-16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mizoguchi et al. (U.S. Patent No. 6,215,460 B1).

In regard to Claim 1 Mizoguchi et al. discloses a head-mounted optical visualization system 1 for a user, the system comprising: an image source 45 for generating a virtual image; an optical deflecting device 40|48 including an optical end element 47; said optical deflecting device 40|48 being optically connected to said image source 45 for receiving said virtual image and for deflecting said virtual image to said optical end element 47 whereby said virtual image is provided in the viewing field of said user in front of the eyes of said user; a frame 10 mountable on the head of said user for carrying said optical deflecting system; and, an adjusting device 60 attached to said frame for variably changing the position of said optical end element 47 substantially in a plane parallel to said viewing field of said user (col. 4, ln. 11-41; col. 5, ln. 29-64; col. 7, ln. 21-49; FIG. 1, 3, 5, and 13. Independent claim 1 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 2 Mizoguchi et al. discloses a head-mounted optical visualization system 1 according to independent claim 1 from which claim 2 depends; which further includes a horizontal guide rail 39 mounted on said frame; a slide 41c supported on said guide rail 39 so as to be movable there along; and, said optical end element 47 being movably mounted on said slide (col. 7, ln. 21-49; FIG. 7). Claim 2 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 3 Mizoguchi et al. discloses a head-mounted optical visualization system 1 according to independent claim 1 from which claim 3 depends; wherein said adjusting device 60

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is configured for continuously or discontinuously changing the position of the optical end element **47** (col. 7, ln. 39-49; **FIG. 7**). Claim 3 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 4 Mizoguchi et al. discloses a head-mounted optical visualization system **1** according to independent claim 1 from which claim 4 depends; wherein said optical deflecting device **40|48** is adjustable with a view to a desired magnitude of said virtual image provided ahead of the eye of said user by said optical deflecting device (col. 7, ln. 54-col. 8, ln. 58; **FIG. 8, 11-12**). Claim 4 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 8 Mizoguchi et al. discloses a head-mounted optical visualization system **1** according to independent claim 1 from which claim 8 depends; wherein said optical deflecting device **40|48** includes an optical deflecting element **48** for deflecting said virtual image to said optical end element **47** (**FIG. 5, 8**). Claim 8 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 11 Mizoguchi et al. discloses a head-mounted optical visualization system **1** according to independent claim 1 from which claim 11 depends; wherein said optical deflecting device **40|48** includes an optical lens system **47** which is adjustable for changing the virtual viewing depth in which said user recognizes a virtual object shown by the virtual image (col. 9, ln. 19-60; **FIG. 1, 8**). Claim 11 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 13 Mizoguchi et al. discloses a head-mounted optical visualization system **1** according to independent claim 1 from which claim 13 depends; wherein said optical deflecting device **40|48** is built into a closed housing **41** at least outside of the viewing field of said user (col. 5, ln. 29-64; (**FIG. 4, 8**). Claim 13 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 14 Mizoguchi et al. discloses a head-mounted optical visualization system **1** according to independent claim 1 from which claim 14 depends; wherein said optical deflecting device **40|48** is tiltably attached to the frame (col. 6, ln. 3-12; **FIG. 6**). Claim 14 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 15 Mizoguchi et al. discloses a head-mounted optical visualization system **1** according to independent claim 1 from which claim 15 depends; wherein said image source **45** is a first image source for generating a first virtual image; said optical deflecting device **40|48** is a first optical deflecting device and said optical end element **47** is a first optical end element; said system further comprising a second image source **45** for generating a second virtual im-

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age; a second optical deflecting device **40|48** having a second optical end element **47** for deflecting said second virtual image to said second optical end element; and, said first and second optical end elements **47** being mounted ahead of corresponding ones of the eyes of said user (col. 5, ln. 29-64; **FIG. 1, 4, 7, 8**). Claim 15 is therefore clearly anticipated by Mizoguchi et al.

In regard to Claim 16 Mizoguchi et al. discloses a head-mounted optical visualization system **1** according to claim 15/1 from which claim 16 depends; wherein said first image source **45** is identical to said second image source **45** (col. 5, ln. 29-49; **FIG. 1, 4, 7, 8**). Claim 16 is therefore clearly anticipated by Mizoguchi et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. (U.S. Patent No. 6,215,460 B1), in view of Rallison et al. (U.S. Patent No. 5,991,085).

In regard to Claim 12 Mizoguchi et al. discloses all of the features/limitations of a head-mounted optical visualization system **1** according to claim 11/1, from which claim 12 depends. Mizoguchi et al. does not expressly disclose the aforesaid head-mounted optical visualization system **1** which further includes a tracking system for controlling the adjustment of said optical lens system in response to the virtual viewing direction and the real viewing depth of said user. At the time of the instant invention, however, the use of such a tracking system in conjunction with a head-mounted optical visualization system was notoriously well-known in the art to which the instant invention pertains. For example, Rallison et al. discloses a head-tracker **100** coupled to a head-mounted optical visualization system **102**, which is similar to the present invention, for use in conjunction therewith (col. 17, ln. 52-col. 18, ln. 58; **FIG. 17A-D**); and expressly teaches the use of such an arrangement to collect information regarding the position, posture, location and/or movement of the user's head; and the use of such information to provide interactive con-

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trol the image generated for the eyes of a user for a number of purposes (col. 17, ln. 19-30). Therefore it would have been obvious to one of ordinary skill in the art at the time of the instant invention to provide a head-mounted optical visualization system commensurate with claim 11 of the instant application which further includes a tracking system for interactive control of the adjustment of the optical lens system in response to the virtual viewing direction and the real viewing depth of the user. Claim 12 is therefore unpatentable over Mizoguchi et al., in view of Rallison et al.

Allowable Subject Matter

Claims 5-7, 9, 10, and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Remarks/Information

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any other inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Spector whose telephone number is (571) 272-2338. The examiner can normally be reached at this number Monday through Friday between 6:00 AM and 2:30 PM. The fax number for the organization where this application is assigned is (703) 872-9306.

February 28, 2005



DAVID N. SPECTOR
PRIMARY EXAMINER